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## THE GREAT HIATUS.

No man of active, investigating mind can concentrate his powers upon the principal subjects of professional study, without discovering very soon that he is unable to answer the questions which continually arise in his own mind,—unable to explain a vast amount of facts which he is compelled to store away in his memory, in all their crudity—and unable to look up from the path of mechanical observation, to take those comprehensive views of nature and the laws of creation, which would delight his higher faculties. If he be a sincere lover of his race, anxious to get rid of the strife, the selfishness, and confusion of society as it is, he needs some sure and reliable principles to guide him—he needs some chart of the natural destiny of mankind, to guide his anticipations. He needs a scientific knowledge of the mental and physical capacities of man, to explain his capacities for the different conditions of society, and to show what reorganization of society would be most compatible with the moral nature, and the laws of human development.

But in the midst of the conflicting doctrines which prevail, he looks in vain, for the knowledge which he desires. He looks in vain, for any system of mental philosophy, which is at once both comprehensive and demonstrative, and perhaps finds himself driven to vague speculation, to obtain those truths which ought to have been furnished him by positive science. If naturally vain and self-satisfied, he may conceive his own crude speculations to be infallible truths, but if cautious and modest, he is deeply impressed with a conviction of the extent of human ignorance.

The student of the science of medicine, who passively receives knowledge imparted by others, may be content with the revelations of his text books, and his professors, but he who is anxious to understand every subject before him, or seeks to know the

cause of every fact, cannot be satisfied with a mere mechanical description of every function of the body, which traces up every vital power to the nervous system, and then abandons the research when the subject has become most deeply interesting.

The Physiologist who refers organic action to nervous power yet gives no philosophy of the brain and nerves, is not a whit more satisfactory to the original inquirer, than the oriental theologians, who have the world supported by an elephant, and the elephant standing upon a tortoise, but fail to inform us what supports the tortoise itself. It is true that our common system of education, develops knowledge and memory, without supporting the reasoning faculties; hence a large majority of those who study medicine, are mere memorizers of facts and experience, or of opinions and authorities, content to receive what is known, and overlook entirely the immense amount that is unknown in medical science. But those of active minds discover that the most important organ of the body, has been almost entirely overlooked by physiologists; that the brain although it governs the physiological constitution, has never been explained as to its physiological functions; that the nervous system which connects all parts of the body in the bonds of active sympathy, has never been sufficiently investigated to explain those phenomena which constitute the greater part of the history of disease, and which constitute the guide to medical practice.

The vigilant medical inquirer soon discovers that the philosophy of medicine cannot be written until the links that connect together the actions of our various organs are understood, and until the most important controlling organ of the whole, is understood in all its powers and relations. Nor will the discovery of the mere physiological power of the brain be sufficient. No system of medical philosophy can be complete, which does not recognize the passions, emotions, and intellectual faculties of man, in connection with his diseases and the natural play of organic life. The medical inquirer, therefore, sees even more clearly than the mere philanthropist, the immense vacuity in our existing sciences. He perceives that in his collegiate text books, there is but the coarser mechanism of the human constitution—the mere foundation of the science of man; and when, in despair of obtaining the higher knowledge that he seeks, he looks to the writings of mental philosophers, he finds that he has passed over an immense void, and left far behind him all that is really interesting in the nature of man. Mental philosophy treats of faculties, without reference to the organs and the vitality of the human constitution. Anatomy and physiology stand as far apart from mental philosophy, as the earth from the sky. In the immense void between them, nothing seems to be established to occupy the vacant space. Yet in casting around his eager eye, to the speculations and doctrines not recognized by colleges, he discovers



something which offers a slight contribution towards filling up this GREAT HIATUS of science. He discovers that Gall and Spurzheim, building from above downwards, have brought mental philosophy into connection with the brain; but still an immense void exists, for they have not professed to trace the mental action through the brain to its relations with the body, nor to trace the physiological powers of the body up to their moving springs in the brain; hence if he becomes satisfied of this substantial truth of Gall's discoveries, he becomes still more deeply impressed with the necessity of forming a complete ANTHROPOLOGY.

In looking around, he finds a new gleam of light. Mesmerism seems to occupy an unexplored field, revealing mysterious internal powers acting in the human body. But alas! Mesmerism explains nothing of the wonders which it reveals. Like a midnight flash of lightning which reveals the sublimities of the mountain without guiding us along a practicable road, it but increases his embarrassment, and his eagerness to acquire that comprehensive knowledge of mind, which may render the phenomena of Mesmerism as intelligible as the ordinary functions of life.

Finally, he meets the phenomena of modern spiritualism, but from the want of a more comprehensive knowledge, he has perhaps, settled down firmly into the doctrines of materialism. He is puzzled beyond measure to know whether to reject these mysterious facts as impostures, or how to account for them if they be true. But if he has been devoted to the study of theology, and has acquired positive views of the relations of God to man, and the significance of biblical records, he is honestly puzzled to know how to regard the new spiritual phenomena, and hopes, perhaps, to find an explanation in some abnormal state of the nervous system. But he looks in vain to medical science to furnish him the explanation which he desires.

Thus every inquirer in the higher departments of knowledge, is compelled to ask for the light of anthropology to guide his path, and to ask in vain. In that immense space which lies between medicine and metaphysics, between abstract theology, and practical philanthropy, between phrenology, physiology, and mesmerism, there is a vast region of chaos and darkness, over which no central sun has arisen to illumine the contiguous realms; no system of Anthropology has yet been established to fill this void immense.

Whether our new developement of Anthropology from the brain appropriately fills this void, is a question upon which the present generation must decide.

## SPIRITUAL WISDOM.

The blind and superstitious reverence which has commonly been cherished for spiritual affairs, exhibits its pernicious effects, in reference to the progressive science of spirituality. The poorest and most indefinite manifestations, whether from mysterious and unknown spiritual resources, or from the vague imagination of the living, are listened to and received by many with passive credulity, which puts reason to sleep. This unthinking submission of rational beings is much to be lamented; but as it usually results in harmless delusion, or silly verbiage, which renders the individual ridiculous, it is less to be regretted than another form of spiritual error which is quite too common.

Individuals seeking to become mediums or organs of the spiritual world, are led by their natural ambition, or self-love, to seek the highest society to which they can obtain access; and having established or fancied a connection with some distinguished Philosopher or Hero—with Franklin, Swedenborg, Napoleon, Gall, Rush, Galen, Wesley, &c., they derive no little pleasure from the thought that they have become the organs or mouth-pieces of the illustrious dead, and are permitted to receive and to diffuse wisdom of a most unearthly grandeur, obtained directly from infallible sources. Puffed up by vain conceits, those who believe themselves upon very flimsy evidence, to be in immediate communication with the illustrious dead, are very apt to grow in their own self-esteem, in proportion to the elevated connections which they have established; and while pouring forth antiquated truisms and harmless moral platitudes, to feel fully empowered to demand the world's reverence, and to treat with contempt the vast mass of accumulated knowledge now in the world, which they suppose themselves to have overleaped and surpassed by establishing a communication with Heaven.

The spiritual dupe and the spiritual visionary, naturally run into the spiritual dogmatist; and the same sectarian dogmatism which displays its Herculean power among Theologians, exhibits itself in a milder and less offensive form among the more visionary spiritualists. The selfish ambition and vanity which prompt the medium to claim an intimate communication with God, with Christ, or with the most illustrious of antiquity, proves clearly his unfitness as the teacher of rational human beings; for he who can be so deluded by his own vanity, as to suppose his common place suggestions, and blundering narrow-minded advice, worthy of the infinite author of the universe, is certainly destitute either of solidity of judgment, or integrity of purpose. I would not say that all mediums of lofty pretensions, are either fools or impostors, but certainly their extravagant pretensions which are not verified by their performances, show that their real spiritual pow-

ers and capacities of revealing truth, are vastly below their extravagant claims.

An intelligent medium at the Mountain Cove Society, in Virginia, claims to be the direct mouth-piece of the Deity, directing the Society to which he belongs—(a strange species of spiritual community,) in the ordinary transactions and management of business, with about the same degree of skill, and as frequent a liability to error, as men of ordinary business capacity. The remarkable contrast between the common-place human intellect which he exhibits as a clergyman and medium—oracle, and his pretensions as the mouth-piece of the Deity, does not seem to be appreciated by the class of spiritualists who constitute the society. These, I believe, are worthy men, with elevated aims; and the entire character of the association and its operations would deserve no little approbation, could we overlook the superstitious delusion which seems to be the mainspring of its action, and the bond of its existence.

The flood of spiritual verbiage which is at this time pouring over the land, although of a low intellectual grade, is a pleasant and harmless mode of liberalizing the minds of the superstitious, and awakening the materialist to the consciousness of spiritual existences; yet we cannot but smile occasionally at the extravagant anticipations which are indulged in, and the immense promises of wisdom from the mediums. The sciolism and verbiage of the works purporting to come from the spirit of Thomas Paine, are but forerunners of similar verbose communications, all promising to bring down to poor mortals an infinite and Heavenly wisdom, and all uttering in grammatical language, self-evident propositions which no one can deny; but as for the wisdom or superior knowledge, the quantity which is revealed bears such an infinitesimal proportion to the number of words in which it is conveyed, as to require the finest spiritual sense, to discover its actual presence. If the spiritual revelators of the present time, are really the truest oracles of wisdom, the world is destined to a slow progress, indeed, and has made but little profit by its telegraphic communication with Heaven.

Mr. John M. Spear, of Boston, reported to be one of the best of men in acts of practical philanthropy, professes at this time to be acting as the medium for a series of medical lectures, by the deceased Dr. Rush, of Philadelphia. Two of these lectures are now lying before me: one a lecture upon the head, the other on the hand. The first lecture informs us that we must be very careful to understand that there are four important words: natural, spiritual, *outernal*, and internal. This being the leading idea of the lecture, must be received as a wonderful revelation, and the immense importance of laying aside the word *external*, and substituting the uncouth term *outernal*, will undoubtedly be best apprecia-

ted by those who know the least of the proprieties and beauties of language.

In reference to the head, we are informed that the natural parts are behind, and the spiritual parts are before, which organs grow as they are cultivated. We are also informed that the eyes are the windows of the head, and that, "in the front part just below the eyes, there is what is generally called by common people, the nose. And here it will be observed, are two apartments. The nose stands out beyond any other part of the head, for a wise and most high purpose. How that performs its appropriate work, will also be shown when the internals are more especially discoursed upon.

"Just below the nose is seen what is called the mouth, with a large amount, and a beautiful variety of furniture. Every part of the furniture has its own distinct, and at the same time, its mutually dependent work."

This is the substance of all the wisdom which Dr. Rush comprises in the lecture on the head. Certainly! not a very great amount for an entire lecture.

The wisdom and science contained in such lectures, are like the cheap and wholesome hydropathic tea, of an economical boarding house, made by putting in a spoonfull of black tea on Monday morning, to yield its aroma to successive gallons of water, from Monday morning till Sunday night. How easy would it be for any individual with common physiological knowledge, and literary fluency, to write by the ream, these common place and wordy commentaries on the human constitution.

The second lecture of Dr. Rush, being upon the hand, contains two or three additional ideas, viz: that the thumb should be called the "branch of blessedness," the forefinger the "branch of direction," the next, the "branch of impartation," the fourth, the "branch of consolation," and the last, the "branch of hopefulness." He also states that various influences proceed from the hand, and that the influences of the elements are received through the hand.

So much for the wisdom of two lectures upon the healing art by Dr. Rush. But if we are tired of the verbose trash of dreamy revelations, it is refreshing to observe, on the other hand, that spirits do sometimes communicate pointed and valuable practical information. The New Era, of Boston, states the following fact in illustration of the diagnostic powers of Dr. Rush, which, if really from a spiritual source, shows that the spiritual power is equal to that of the clairvoyant.

**A SIGNIFICANT FACT.** — A lady in this city was sick of some chronic complaint, and under the care of a regular Old School Physician. One day she chanced to be in circumstances where she underwent an examination by Dr. Rush, and a minute description of her disease was dictated and noted at the time.—

This paper was taken to the aforesaid physician, without apprising him of its source. He read it, and pronounced it *remarkably accurate*, at the same time desiring to know where it was obtained. He was told that it was the *diagnosis* of *Dr. Rush*. *Dr. Rush!* Who is he? inquired the Doctor, incarnate. Why, Dr. Rush, of Philadelphia, replied the lady. I thought *that* Dr. Rush was *dead*, said the physician. And so he is, replied the other, but he sometimes examines patients *even now*, and that is his opinion of my case."

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### PHYSIOGNOMY.

How rich, how delicate, and how copious is the expression of a beautiful female countenance. Its delicate surface, neither browned by the weather, nor disguised by a coarse thicket of beard, reveals the most transient variations of color, and with hues and tints which the artist can scarcely rival, produces a picture of a thousand attractions, in which every variation is curiously expressive. Can all this evanescent play of hues, which like the colors of the sky and clouds seem to defy classification, be clearly defined by science, and comprehended in a system of physiognomy?

Beyond a doubt, there is nothing in the expression of complexion, which we may not understand with exactness. We know what are the elements of this beautiful picture—the red and dark blood, the lymph, the cellular, muscular, nervous, fibrous and oily substances, and the peculiar coloring materials which are secreted, may all be definitely described by the anatomist, leaving to the neurologist the duty of describing the movements of the fluids, the growth of the solids, and the peculiar combination of all in forming the complexion. To illustrate the practicability of determining the causes of the complexion, and the expression which we may justly attribute to it, let me refer to the explanation of certain familiar examples. Let me suppose, for instance, a young person of delicate and sensitive emotions, called out suddenly in a large company of friends, and unexpectedly complimented in a generous if not extravagant manner, for his meritorious conduct. At once we observe an embarrassing excitement of his modesty, and a flushing of his countenance, particularly developed in the upper and central portion of his cheeks. It is evident in this case that the sentiment of modesty, acting through its cerebral organ, has powerfully affected the region of the face with which it corresponds. Again, let us suppose a refined woman in society, hearing suddenly a coarse and revolting remark, which is decidedly adverse to her ideas of propriety; in this instance the adjacent organs of Modesty and Purity are painfully impressed, and the

unpleasant effect may even go so far as to produce a pallidness in the sympathetic region of the face; but in the majority of cases, the instant reaction will be sufficient to develop a circumscribed redness in the facial region of Modesty. Thus, in proportion to the activity and excitement of a large number of organs, chiefly in the anterior half of the head, the face exhibits a rosy glow or variation of tints, which at a glance reveals to us the activity of the corresponding organs of the brain, and informs us of the purity and refinement of the character.

In opposition to those delicate and refined organs, which produce this diversified beauty of expression in the countenance, we have occipital and basilar organs, which tend, in an opposite manner, entirely to suppress that delicate and transient play of color, leaving the countenance in some cases pallid and wrinkled, in others of a brownish tint, and rugged appearance, but in all destitute of that transcendent brilliancy and beauty of expression, which arises from the amiable organs in the anterior half of the head. Every one at a glance distinguishes between the rosy cheeks of the innocent maiden and ingenuous youth, and the war-worn features of the old grenadier, or the parchment-like surface of the countenance of the inveterate miser.

But, it may be asked, do all the organs reveal themselves in the countenance in as distinct and striking a manner as those of Modesty and Purity, and the refined sentiments? I would reply that all organs have alike their exact local and definite mode of expression, although none produce so distinct and delicate an expression in the countenance as those of sensitive Modesty and Purity. The regions of Sensibility and Disease, adjacent to Modesty, produce even greater and more striking variations of complexion. Every physician recognises at a glance, the expression of disease or pain, in the countenance of the patient, but on the other hand the organs of Firmness and Self-esteem are far less marked in their facial expression, and we may therefore easily mistake the strength of character, if we judge only from the play of expression in the countenance. But under the most favorable circumstances it may be asked, whether the active expression of the countenance can keep pace with the variety of human thoughts and emotions—whether there is not something undistinguishable, and beyond the reach of the anatomist, by which the influence of one mind is transmitted to another? It must be acknowledged that while the permanent form of the features indicates the permanent cast of the character—while their movement and complexion indicate the activity of our faculties, the subtlety of thought far transcends the pictorial power of the countenance.—Between those who sympathise, a great deal of reciprocal intelligence is transmitted, which has no definable forms of expression in the features.

The eye is the great avenue for intellectual and spiritual ex-

pression—for the transmission of the soul-force—for the reaction of minds upon each other. But what is it that passes from eye to eye, which establishes the sympathy of congenial minds, and often enables one to know the very thoughts of another? Here we tread upon the borders of the spiritual world,—and they whose natures are most elevated by spiritual refinement above the clogs of matter, most readily communicate their volumes of inexpressible thought and emotion. In the tranquil realm of the departed, thought is poured from mind to mind, and mutual apprehension is complete, upon mutual attention. Thus in our own spiritual nature here, there is sometimes a development of subtle power, which leaves material physiognomy behind as a worthless vehicle, and the calm inexpressive features, like the tranquil countenance of the clairvoyant, contain no picture of the spiritual life that is passing through the portals of the eyes. Indeed, it is the tendency of a higher and more refined development to enrich the eye with deep expression, discarding the play of the features as belonging to a lower stage of development.

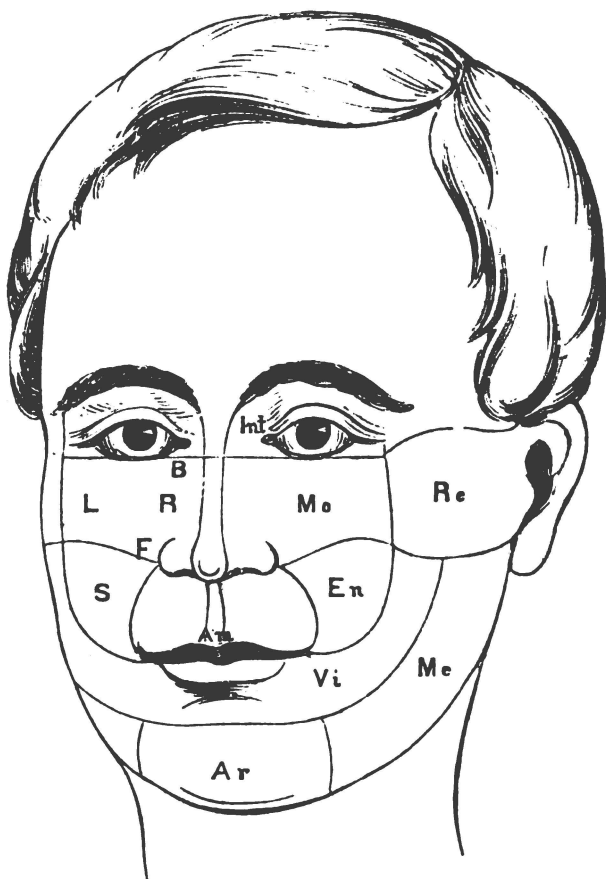
The lowest of all forms of physiognomical expression, is that which belongs to grimace, and muscular contortion of the face; yet in theatrical performances, and in popular eloquence, we often observe this coarse and mechanical form of expression, displayed to an extent which may please the groundlings, but which is really offensive to a refined taste.

The highest form of physiognomical expression is that which is almost invisible—that God-like power which through the dark outlets of the eye, charms, moves or overawes, all who feel its power. In this we have another illustration of the law of nature, that the higher and subtler powers are those which are most remote from material embodiment, and most mysterious in their mode of existence.

Nevertheless, the great mass of human manifestation, is of a character which distinctly expresses itself, in the countenance, and as every organ of the brain has its particular seat of expression in the face, the subdivisions of the face correspond to those of the surface of the cranium. The same subdivision of the intellectual, moral, and selfish organs, which belongs to the phrenological map of the head, belongs to the physiognomical map of the face; and the relative development of the different regions of the face, although not a positive criterion of the powers of the organs, is a correct indication of their relative activity and frequency of manifestation. Organs which are habitually active, and predominant—habitually accustomed to active manifestation, do not fail to indicate their existence by conspicuous facial development.

The principal divisions of the physiognomical map are indicated in the following engraving, which gives the outlines of the new scientific physiognomy, based upon experimental demon-

strations. The minute subdivisions and details of the physiognomical map, may be easily calculated by reference to the general phrenological map, to which the facial diagram strictly corresponds.



**EXPLANATION.**—INT. Intellectual; Mo. Moral; EN. Energetic; Vi. Violent or criminal region; Re. Relaxation or Debility, Me. Melancholy; Ar. Ardor; B. R. F. and L. Benevolence, Religion. Firmness, Love; S. Self-esteem; Am. Amativeness.



## CEREBRAL ALTITUDE, AND THE LAW OF PROGRESS.

The glorious truth that the progress of humanity is ever onward and upward, may be learned by the faithful reader of history, or the close observer of the vast volume of nature. But all who are learned in the records of the past do not clearly discern, in comparing the different eras of the world, the prevalence and power of the law of progression. On the contrary, there are not a few gloomy conservatives, who are continually predicting the downfall of republicanism and everything that is good, and who discern so much of evil in the present, that they are disposed to look back to the good old ages of barbarism, as the golden ages of humanity; nor do our learned naturalists always rightly interpret the teachings of this globe and its monuments of the history of vegetable and animal life, in which the law of progress is developed. In the vast area of nature, it requires the liberal and philosophic eye to recognize at a glance the great designs which are progressively unfolded.

I have therefore thought it would be interesting to glance at the brain of man, in which, within convenient space, we may behold the beautiful illustration of the law of upward and onward progress, and at the same time observe the sublime illustration of the correspondence and connection between the material and the spiritual.

The arrangement of organs in the human brain is such that their relative position, as to contiguity of development, corresponds to the association of their objects in nature, while their different degrees of altitude in position, correspond with the moral elevation and dignity of their functions. Thus, for example, the physiological, or animal nature of man being inferior to his spiritual nature, the organs of physiological manifestation are located at the basilar surface of the brain; those which belong to its upper surface being calculated to subdue or moderate its animal force. The organs at the basis of the brain point downward to terrestrial objects, and, acting upon the organs of the body, bring us in contact with these material objects. Hence, we find that in proportion as an organ in the human brain is material in its sphere of operation, it is located near the basis, while in proportion as it has less connection with matter, and more to do with the spiritual elevation and regulation of life, its position in the brain is higher, or more remote from the basis. The governing spiritual, or anti-brutal powers are placed at the summit, indicating their natural authority over the subordinate organs, and are mechanically supported by the subjacent portions of the brain, upon which their weight is resting, and which, when excited, they compress, control and paralyze. The region of Religion and Benevolence, when roused by moral motives, under-

goes an actual material expansion, by the afflux of blood, which enables those organs to suppress and hold in submission the antagonistic region of Selfishness and profligate passion.

The simple law which I have just announced, forms a perfect guide to the study of cerebral functions. In proportion as we ascend upon the surface of the cranium, we rise in every instance to a function of higher character—less material in its nature, less productive of agitation and excitement in the body, less disposed to muscular action, and less limited in its application to localities or objects. In short, we ascend to those higher powers whose manifestations are calm and intellectual, and whose sphere of interest is co-extensive with the entire human race.

Let us now examine the brain in detail. In the front lobe we find the organs of Form, Size and Distance, Weight, Color, Order and Number, all of which relate to physical objects, and are most useful for the lowest material purposes. They give us perceptions in which we are equalled, if not surpassed, by animals, and which merely recognize the physical world as it is, without suggesting any mode of revealing its hidden capacities. There is nothing hopeful or progressive in this animal region of the intellect. It is the region most active in the conservative class of society, who are dead to all suggestions of improvement. They see what is for the present—they have no faith in that which is not. What an immense amount of intellect has been displayed by authors, statesmen, generals, artists, naturalists, travellers and men of business, which has been unprofitable to the progress or improvement of mankind. And here is the explanation: their intellects belong to the lowest plane of the intellectual organs—to the region of animal intellect, which has no aspirations. The author and naturalist describe what they have seen, or what has been seen by others, and accumulate learning without mastering philosophy. The ancient physicians were learned men, if we judge from their voluminous writings, which so long controlled the medical profession. Galen, for more than a thousand years, was the principle source of knowledge to physicians; yet how meagre and trashy do we find the voluminous writings of the ancients, in which animal observation or indolent conjecture occupied the place of rational investigation.

What an immense amount of talent and force of character has been exercised in the government of armies, the management of empires, and the transaction of commercial business; yet why are governments, commerce, and the whole philosophy of life still, in the richest and most learned nations, all involved in chaos? Why! but for the simple reason that the intellect of statesmen, kings and merchant princes was not the higher intellect that leads to truth, but the animal intellect which recognizes existing facts, and knows no higher condition? Generals and kings estimate the strength of their armies and know what their power can ac-

complish, but they cannot appreciate the principles of human nature, which would render possible a society without the sword and bayonet. Even at the present day, and in our own country, if we converse with politicians, we find that they are rich in the acquired knowledge of the facts of history, the statistics of their own country and its party politics, but comparatively destitute of knowledge of the first principles of government—the fundamental laws of human nature, and the capacities of society for any higher condition than the present.

The animal intellect becomes learned, rich in facts, precise in statement, and irresistibly positive in its perceptions, but all that it knows is limited to that which is, and that which has been; as to that which may be in the future, it is blind and incredulous. Hence it is vain to hope for any high career to a nation whose leaders have not the higher forms of human thought. The animal intellect judges of the future by the past alone, and repeats with a monotonous frequency, the scenes which have already been enacted, doubting continually whether the future will even equal that which has preceded us. They, only, help forward the march of nations, whose higher intellects perceive the path to a brighter future, and who are able to infuse their clear convictions into the minds of others. They who are always estimated more or less Utopian, are the true leaders of humanity, and not the generals or kings, who, by their crushing power, keep down and hold fast the struggling power of a nation.

I have spoken thus of the anti-progressive character of the animal intellect, because it is so common when new suggestions are advanced, to have them referred at once to influential and learned classes whose talent and knowledge are well known, but whose intellect, springing from the barren region of animality, is incapable of producing or receiving a thought that would elevate or advance mankind. When such men pronounce against a new discovery, and declare that it transcends "the limits of human knowledge," the masses are content with its rejection; yet how ludicrously absurd that men, who have no original thought, should pretend to judge of the value of original thoughts—that they who cannot invent themselves, should presume to decide upon the productions of an inventor—that they who cannot accomplish anything in improvement, should presume to deny the feasibility of great improvements; like the Earl of Derby, who, never having been known to make a suggestion of much value to mankind, confidently proffered to eat the boiler of the first steamship that should cross the Atlantic. The practical millers, who first beheld the improvements of Oliver Evans, in mills, pronounced them entirely worthless, being equally incapable of making an invention themselves, or understanding one made by another. The multitudes who looked at the steamboat of Robert Fulton, being incapable of making or understanding a steamboat

themselves, would not believe that it could ascend the Hudson river.

At the present time a thousand improvements in society, philosophy and art, are struggling into being, while the mighty mass of human intellect, guided chiefly by the animal organs, refuses to recognize any improvement until its value has been demonstrated by experimental success. Kossuth and Mazzini are ready to prove that Hungary and Italy are capable of maintaining republican governments, and attaining a higher prosperity; but those who are accustomed to the law of brute force alone, will never concede the possibility of their success until, through fire and blood, they have found the path to liberty, and maintained their republics against the legions of despotism.

Shall it be thus forever? Shall the animal intellect alone guide the policy of nations and the judgments of learned men? Most emphatically no! the law of progression forbids it; the structure of the brain, the laws of its development, and the progressive changes in the human constitution, now going on in all quarters of the globe, forbid that the ascendancy of the animal organs should continue. Let us look a little farther, and we shall find that they are already declining—that the brain of man is slowly maturing from below upward, and that the intellectual and moral powers of mankind are destined to govern the animal nature, as surely as the sun will rise to-morrow.

[TO BE CONTINUED.]

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## THE MORMONS.

The history and movements of these people are deeply interesting. Beyond all doubt, Mormonism is in triumphant progress at present, and it is probably destined to become, as Kossuth expresses it, "*a power on earth.*" Nor is there as much to be apprehended from this movement as many might suppose from the ignorance and superstition connected with its origin. The Mormons, practically speaking, are a good set of people, temperate, industrious and zealous—their individual and national prosperity are insured by their traits of character. They are working out on a large scale a new experiment in government, religion and social order, the results of which cannot fail to be instructive to spectators.

Their peculiar scheme of orderly and legal polygamy, designed to suppress prostitution, and favor the increase of population is quite startling to the people of the United States, who have made polygamy a crime. This bold experiment will test the sin-

cerity of those democratic advocates of state rights who claim for the people of each state a species of national sovereignty.

The question has already been asked, whether the people of the older states should not by military force compel the Mormons to surrender their religious system of polygamy. Yet there could not be a greater outrage upon liberty. Every religious system has equal rights to toleration—and marriage is a civil institution upon which state governments alone have the right to legislate. The fact that the Mormon country is not yet admitted as a state does not in strict justice invalidate the right of the people to make their own laws, which none but a tyrant would question.

A correspondent of the *New York Times* writes as follows:

"CITY OF THE GREAT SALT LAKE,  
Saturday, August 21, 1852. }

At last we find ourselves in the great City of the Mormons, after a travel of thirty-nine days. We have passed the greatest mountain barrier in the world—we have seen successively immense sterile valleys, huge mountains of naked granite, tumbled in inextricable confusion, fertile savannahs, where the buffalo, the deer, the elk and the mountain sheep delight to wander, and ranges of peaks clothed in verdure at their bases, and capped with sparkling coronets of snow. We are now in the midst of the strangest sect which has sprung up in modern times; a sect which had its origin in ignorance, craft, vice and superstition; and yet a sect which has already accumulated a population in this wild region, of over thirty thousand people; has its missionaries in every country of Europe, in Asia, in Egypt, in South America and all the chief Islands of the Pacific; and the final destinies of which baffle the speculations of philosophy.

It is difficult to conceive anything more beautiful than the situation of this extraordinary City and the surrounding region. It lies on the western base of the Timpanogos Mountains, which stretch from the Northern horn of the great Salt Lake southward to the sources of San Joaquin, and forming the dividing ridge between the Colorado of the West and the great basin of California, and on the eastern shore of Utah Lake, which is fresh and pellucid, and pours its waters into the Great Salt Lake. At the hour of sunset, if we look to the west, the beautiful expanse of waters lit up with the departing rays of the sun, and dotted over with islands, presents a scene of fairy-like enchantment. If we look to the east, an amphitheatre of mountains clothed in rich verdure and capped with snow, reminds us of those gorgeous scenes in eastern story, where the Genii hold their dwellings.

The whole style and appearance of the City differ from that of any other city in the world. It is laid out into blocks of ten acres each, with rectangular streets, about sixty yards in width.—Streams of ice water, conducted in trenches, run through each of these streets. Each square is subdivided into lots of one and

quarter acres each, which have generally become the property of a single individual, and upon which he erects his house and raises his crop of corn, oats, wheat and vegetables. Certainly nothing could be more healthful or give so picturesque an air to a city as this arrangement. The greater portion of the houses are built of adobes, or sundried brick, but there are some constructed of logs, boards, or planks. They are usually but one story high, with a few two story ones interspersed here and there. These larger buildings are occupied by Brigham Young and other elders of the church. There are many people too—new comers chiefly—who actually live in tents and wagon-bodies scattered along the spacious streets. Their fences present a curious medley. They are sometimes constructed of poles hauled from the mountains, sometimes of planks, sometimes of split boards, sometimes of posts and raw hide, framed like wire fences, sometimes of ridges of earth, and sometimes of adobes.

"The Tabernacle and the Council House are the two chief objects of attraction in the City. The former, a long, low, broad building, capable of containing six thousand persons, is the temple in which this people perform the public ceremonies of their religion. The latter, smaller, of course, in size, is the place for the distribution of justice. The emigration is greatly larger this year than during any one since 1850, and it is doubted whether it does not even exceed that year. When I arrived here the streets were filled with them, and black-smiths, wagon-makers, and the shoers of horses and oxen were busily plying their trades in preparing them for the onward march through the great Sahara of North America. The great body of them had already passed.—A large number also struck off on western routes from the Bear River Valley, and thus avoided seeing this City. They are generally Illinoisans and Missourians, who have some reason to dread the country of the Mormons.

"There is reason to apprehend that these people indulge no warm feelings of attachment to the people of the Old States or of California. They evidently look forward to the day when, as they say, the times of the Gentiles shall be fulfilled, and they shall be delivered into the hands of the Saints, that their reign of a thousand years may begin. Already this Territory has grown into a place of vast importance to the trade and travel between the valley of the Mississippi and the Pacific coast. It stands relatively where Palmyra did in ancient times, and if means are not obtained to check it, it will obtain an unbounded control over all the habitable country in the Rocky Mountain range."

The practical operation of the Mormon system of polygamy is described as follows, by a lady in Utah, writing to a friend in Ohio. She seems to think polygamy a hard bargain for the men:

"I have intended for a long time to give you a chapter on Polyg-

any, as soon as my observation of things here would give me the opportunity to do it with justice to the subject. I have now been in all the settlements of the territory excepting one; and after quietly noting what has come in my range, I have come to the conclusion that the *men* and not the *women* of Utah Territory, *are to be pitied*. After you have finished your oh's and ah's, and after you have lifted your hands in astonishment long enough, I will tell my tale. Probably not one in a hundred of my sex would have decided the question in this manner, and how I came to take this view of the matter I know not, unless it be upon the supposition that in some former state of probation and transmigration, I have seen a man, and experienced myself the difficulties and vexations which belong to his condition. Excepting, in my sympathy, those mothers here who have daughters, I feel disposed to offer condolence of the most sincere kind to the male portion of this community.

"In the first place most essentially do I pity the conscientious young man who came here with a wife; and perhaps children, to who he is devotedly attached, hoping here to spend in quietude and peace his remaining days, and use up his life for his faith and the beloved ones. He is at first startled and grieved at the aspect of things here, and is perchance shaken in that faith for which he would have periled his life; but after some struggles he wisely resolves that let others do as they will, he will be true to himself and the marriage covenant he has made. Rash dreamer! to think he can withstand the powerful influences that are wielded there. If he is sensitive to ridicule, short indeed is the repose into which he has lulled himself. If he can bear it to be told that he is under 'petticoat government,' and that he 'dare not get another wife,' then indeed does he deserve a martyr's crown. Should he come off triumphant in this, he is yet to be tried on still tenderer points—his faith and his ideas of duty. If he stand aloof from the avowed doctrines of the church, he is after a manner a heretic and gentile, and anathemas, loud and deep as those showered upon the women who oppose the doctrine, are hurled at him; and then it is that wearied out with always being in an adverse position, he begins to examine the reasons which have been urged upon him. M——, his neighbor, is a good man—has the confidence of community—is honest, industrious, and a kind neighbor, and though he has several wives, they all appear to get along amiably. Would it be any better if he had but one, and the others were alone in the world, with no one to stand at their head and advise them? Would they not in that case, be exposed to insults and injuries from which they are now exempted—and finally, is not the man at least *justified* in what he has done? He is not only protecting them and supporting them honorably, but he is raising several families of children, and all promise to make useful and intelligent members of society. On

looking these things and many others over, the man is staggered, and finds himself at length in 'Doubting Castle.' Then there is the example of the ancient patriarchs, and after all his opposition, he at last rather unwillingly admits that it may be all right, *doctrinally speaking*.

After making this concession, he again flatters himself there is peace for his troubled soul. But public opinion, that potent engine, is all powerful here on this subject, as it is elsewhere on others. The time has been when it has been said with a sly point of the finger, 'that man has two wives;' soon it will be reiterated on the house-tops, with the hiss of the populace attached, 'that man has only *one* wife.' Already is this felt to some extent. If cases of unhappy families are alluded to, that argument is at once nullified by the answer that there are wretched families and neglected wives and children, under the old system where but one wife is allowed—and that a man who is a tyrant, will be no more a tyrant with twenty wives, than with one; that in short his domination will be divided and weakened among so many.

"You may think a small degree of energy would enable a man situated like the one I have been describing, to throw off what you will call such spider-webs and sophistry. But you are mistaken. To be 'out of fashion,' or 'to be in Rome and not do as the Romans do,' requires a perversity of taste and disposition seldom encountered in either man or woman. The man whose course I have traced thus far, begins gradually to feel that he is getting to be quite a cipher in society, and that the talent he possesses must either be lost and sunk into obscurity, or he must look around him for another wife. Heavens! how his heart beats: popping the question the first time was nothing compared with the bare thought of popping it the second. But dreadful as is the alternative, the step must be taken; it is a necessary sacrifice to duty, aided on by the prospect of making his present family more honorable in the eyes of the world. To prove his sincerity and render it apparent to all, he passes by all the pretty young girls and selects some maiden lady well advanced in years, or some widow with or without a family of children,' thus burdening himself with their support. You must remember it is a conscientious man I am describing. There are plenty of *wise* ones here who can choose the young girls with their pliant tempers and unformed habits, and mould them at their will, but he has taken those who, with habits set, are not likely to increase his domestic felicity. When listening to others had he remembered the fable of the fox that lost his tail in a trap and then tried to persuade the rest of his kind to part with their's, he perhaps would have done differently.

"A second class, here equally deserving of commiseration, are those who have adopted what is called with singular delicacy, the 'plurality system,' and who attempt to discharge their multi-



plied duties in a strictly just manner. There is about as much wisdom manifested in this arrangement, as a mother would display if she bestowed precisely the same attentions on all her children of different ages, and because she made little turnovers and saucertarts for one three years old, thinks she must make the same for one fifteen. The husband is determined he will treat all his wives alike; it shall never be said that in his administration there is any favoritism. No, indeed! even-handed, strict and equal justice is his motto in all cases. Behold him, then, as he undertakes to carry out his principles. He has four wives, a native and foreigner, a northerner and southerner, as the case may be, each differently educated, and brought up with different habits and dispositions, and different ages. To say nothing of the room in the family carriage when going to church, and the distribution of various favors and honors, too numerous to mention, the piece of meat purchased on Saturday night must be divided into four pieces, and even Shylock's balance would be insufficient to give each their due proportion of fat, lean and bone; and at the same time take into the account the difference of children in each house, together with the allowance for the time he intends to board with each during the week. With knife in hand he may puzzle himself for hours, and turn it over and over again, and fail to mete out justice at last. If he takes up one baby, there are three more to be taken; and if he walks to church with one wife on one Sabbath, he must take number two the next, and number three the next time, and thus taking lessons in mnemonics constantly. If he is absent-minded or forgetful, or deeply engrossed in business, woe to his peace! As no man can understand even one woman, how he is expected to comprehend four of them, is an enigma; and the misunderstandings that arise keep him in a continual tread-mill. In short, he finds he has got into 'unexplored regions.' His domestic comforts are not multiplied in a direct ratio with his increased family. There is this wanted in one house, and that in another, and he probably finds that having a pretty mistress in some quiet corner is a very different affair from having several wives who want regularly their bread, meat, ovenwood. On the strength of such time honored sayings as 'too many cooks spoil the broth,' 'what's every body's business is nobody's,' and 'the child whom many father's share, hath seldom known a father's care,' I venture to assert that a man with three or four wives will never know where his clean shirts and stockings are, and what is worse, will never know whether he has any at all. He may begin at seven on Sunday morning to dress for church, and though his houses are 'all in a row,' he may run from one to another until he be too late at last. Now comes the winter of his discontent,' but he must choke down his regrets as best he may for there is no shirking the responsibilities he has voluntarily assumed provided, his wives are contented and be

have themselves properly. If, however, they are dissatisfied, they can readily get a divorce without suffering in the opinion of the public.

I believe I have considered the subject candidly. I am sure I intended to do so."

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## ON THE CAUSES OF RAIN AND THE POSSIBILITY OF MODIFYING THEM BY ART.

BY DANIEL VAUGHAN.

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In the science of Meteorology, little has been hitherto contemplated, except the investigation of the phenomena which take place in the atmosphere, and of the causes from which they originate. My present object is to examine how far it is possible for art to co-operate with nature, in furnishing the land with the supply of water required for the maintenance of animal and vegetable life, and how we may avert the calamities arising from an excess, or from deficiency of rain.

The origin of the water which we receive from the atmosphere, may be traced to the evaporation which proceeds, with little intermission, on the ocean and on all wet surfaces. If air be confined in a receiver over water, it soon becomes saturated with aqueous vapor; but on elevating the temperature it will take up an additional quantity. If the temperature be reduced, part of this vapor will condense and be deposited as dew. But the greatest rains being generally preceded by sultry weather, the condensation of vapor necessary for their occurrence cannot be imputed to cold, and accordingly Hutton has endeavored to account for it on a different principle. His theory, which is now generally received, is founded on the fact that two volumes of air saturated with moisture at different temperatures, will be over-charged with it when mixed together, and deposit part of it in a liquid form. The continual union of unequally heated portions of the atmosphere must, indeed, give rise to a condensation of this nature on numerous occasions and be a prolific source of rain. But it would appear that the common mass of air resulting from such a mixture could part with its superfluous moisture, only, and that after sending its rain to the Earth, it should be still saturated and ready to discharge fresh torrents on the least depression of temperature; whereas experience shows that, the commencement of cold is generally attended with a cessation of rain, and a return of the atmosphere to a state of comparative dryness. In other instances, the defects of the theory are but too apparent; and though the in-

fluence of heat cannot be lost in the atmosphere, it must be modified and often overruled by some other cause.

That electricity partakes of the power of sustaining vapor in the atmosphere is evident from several facts. When allowed to evaporate, the surface of water is not only cooled, but is also rendered negatively electrified, while the vapor itself is positive. From this it appears that the vapor is formed at the joint expense of heat and electricity. Experiments also prove that evaporation is retarded whenever the water is insulated; a result which shows more conclusively the part which the electric fluid acts in the production of vapor. Accordingly the amount of watery vapor which the atmosphere can contain, depends not only on its temperature, but likewise on its electricity, which, according to all experiments, is much increased in intensity at great elevations, and here its agency becomes important as that of heat declines. The evaporation of water and the friction of the air against the surface of the Earth, are commonly regarded as the principal sources of atmospheric electricity; and, to render the mechanism of nature more effective for its development and for confining it to the upper regions, an insulator is provided by means of the lower stratum of air which is most free from humidity, for the moist air continually ascends on account of its inferior specific gravity.

It is well known that positive electricity is always liberated whenever vapor is condensed; and, should its escape be prevented by insulation, the condensation will, of course, be retarded. The non-conducting property of the lower stratum of air will therefore, be the means of keeping the aqueous vapor dissolved in the atmosphere until the insulation is broken by the near approach of humidity to the Earth's surface or by other causes. The electricity being then no longer confined by a proper barrier should escape to the Earth; the portion of vapor which was dependent on its support, should condense and, in most cases, descend as rain; while, at the same time, the drops in approaching the surface of the Earth, should saturate the air with moisture, and thus furnish a means for the more rapid discharge of electricity and the more complete precipitation of the superfluous water of the atmosphere. Very extensive plains, with no highlands to cause a premature discharge of the electricity, should therefore, present us with meteoric phenomena similar, in all respects, to that exhibited in the experiment with "Tantalus' Cup." Rain should be generally suspended until the atmosphere was almost filled with moisture; but having once commenced, it should descend in great torrents; the escape of the electric fluid should be marked with thunder and lightning; and the waters which several days' evaporation had raised from the Earth should be precipitated to it in a few hours. Such peculiarities characterise the fall of rain in the prairies West of the Mississippi and the steppes of Central Asia; but the most striking illustration of this theory is presented by those vast

deluges of rain which, in tropical climates, succeed the long continuance of dry weather.

Were it not for the insulating medium near the Earth's surface, the atmosphere, instead of accumulating such vast supplies of water, should discharge every slight excess of it, in obedience to the changes of temperature, or to those causes to which Hutton has confined his exclusive attention. The commencement of rain is indeed frequently caused by the mixture of unequally heated portions of air. But large bodies of fluid mix together very slowly, as is evident from the long time which the waters of the Amazon or the Gulf Stream require to become incorporated with those of the Atlantic; and the confluence of different winds or ærial currents, is alone inadequate to produce a violent or a general rain. It is only in high latitudes, where the region of the clouds has little elevation, or in places where it is penetrated by lofty mountains or deprived of electricity by some other means, that the condensation of vapor is effected for the most part, by causes now recognised by meteorologists; and accordingly in such localities, fogs and mists are common, and rain frequent but not excessive.

In consequence of the humidity of the upper atmosphere, mountains withdraw its electricity from a considerable distance; and by causing the descent of rain, open numerous channels by which the electric fluid passes from much greater distances to the adjacent lowlands. The indirect influence of mountains, therefore, extends many miles around them, and hence it is that they do not themselves receive as much rain as the plains and vallies in their vicinity though their effect on its production is too obvious to be doubted. In the vast island or continent of Australia which contains no mountains, years sometimes elapse without a single shower; a cloud on the sky is regarded as a phenomenon; the rivers are all too insignificant for navigation, and most of them are quite dry during eight months of the year. A single river of the mountainous region of South America, contributes more water to the ocean than all the rivers of the continent of Africa, which is much more extensive. Even the principal African rivers rise in the highlands under the Equator, they receive scarce any accession of water from the lower districts, and indeed they furnish no exception to the law that, the greatest rivers rise among the most extensive mountain chains. It is probable that the influence of mountains on the frequency of rains, did not escape the penetration of the ancient Egyptians who have left so many memorials of their mechanical skill and of their knowledge of Chemistry: and indeed it would seem that their wonderful pyramids were intended to invite to their lands those fertilizing showers, which appeared so reluctant to visit such vast plains, as were furnished by nature with no eminences sufficiently elevated to pierce the region of the clouds

The part which trees take in the removal of electricity from the upper regions, is far greater than might be suspected from their moderate elevation; for unlike mountains, they permit the moving mass of air to pass over them without increasing its height, and besides, they improve its conducting power by diffusing a coolness around and condensing moisture far above their branches. It appears from the experiments of Crosse, that the amount of electricity discharged by trees which are occasionally struck by lightning, is small in comparison to what they continually abstract from the air, in an imperceptible manner. Trees, therefore, like mountains, must increase the amount of rain and cause it to fall in gentle and seasonable showers, instead of coming in rare and violent torrents. That the destruction of forests is attended with a diminution of rain, is a fact proved beyond doubt from observations made on this continent; and, according to Humboldt and Boussingault, the same result is visible in South America. "But," says the last writer, "it has been further noticed that, since the clearing of the surface from forests, the torrents and rivers, which seem to have lost in amount of regular supply of water, *had become subject to sudden and extraordinary risings* which had proved the cause of numerous and grave calamities." I might remark that the cooling influences of trees alone, without the medium of electricity, could never enable them to withdraw more water from the atmosphere than was exhaled or evaporated from their leaves.

The barrier between the Earth and the immense reservoir of atmospheric electricity is occasionally broken, not only by trees and mountains, but also by the ascent of spray from a rocky coast on which the waves exert their violence, and the rapid evaporation which ensues not only pours water into the atmosphere, but facilitates its return to the Earth. It is on this account that islands are generally so remarkable for mists, and for constant and frequent rains, but seldom experience the effects of violent or disastrous showers; and the same remark is applicable to all lands adjoining rocky coasts. The frequency and the abundance of rain in the Archipelago of Chonos, on the coast of Norway, and on the lands of the Straits of Magellan, show how this inference accords with observation.

From the result of the experiments of Nature, it is evident that by discharging the electricity in the upper part of our atmosphere, we may deprive rain of its injurious effects, and not only render it more beneficial to our wants and to the purposes of agriculture, but even extend the benefits to the sandy deserts and redeem them from their present sterility. The construction of lightning rods on a scale sufficiently large for this purpose, would be attended with the greatest difficulties. But a momentary communication with the imprisoned electricity is all that is desirable since a more suitable passage for its escape would be immediate.

ly formed by the descent of a small quantity of rain if watery vapor were present in a sufficient quantity, and if vapor were deficient, a permanent communication would be useless. A temporary communication may be most readily formed by projecting a considerable body of water into the atmosphere by the means of the expansive force of condensed air, or of carbonic acid subjected to a pressure, somewhat less than is required for its liquification. The following plan for this purpose, seems best calculated to allow the elastic forces sufficient time for action, and to obviate the difficulty of permitting the water to escape at once from an enormous pressure through a large orifice with a sufficient velocity.

Let a large tube of the form of the letter U, or of a semicircle, be constructed, by joining together a number of straight iron pipes, making a slight deflection from a straight line at each point of juncture, and let it be placed with both ends upright and one of them permanently closed. The other end is to be stopped air-tight by means of a large valve which presses against its mouth, and turns on an axle when opening, while it is secured on the other side by a lever, so arranged that, on the fall of a weight on its remote extremity, it loses its hold on the valve and allows it to open. At a short distance below this valve, let the tube communicate with a strong vessel, in which carbonic acid is prepared by the action of sulphuric or muriatic acid on carbonate of lime, or with a condenser, if air be employed. Having introduced water into the tube in a quantity sufficient to fill one-sixth of its capacity, the valve must be closed, and the apparatus arranged for the introduction of the air or carbonic acid into the confined space. The gaseous mixture after forcing the water in the closed end of the tube above its former level, will rise through it in bubbles, filling the space over it and attaining nearly the same density as in the other end. When the pressure becomes as great as the strength of the tube will permit, the valve being allowed to open, one part of the confined air or gas escapes and clears the orifice for the exit of the water, which is driven into the air by the expansion of the other part of the gaseous mixture in the remote extremity of the tube. To prevent absorption of the gas, (which would be a serious inconvenience,) the water should be saturated with salt or heated to a few degrees below the boiling point. That the valve may not be broken from the violence with which it opens, the lower part of the arc it describes, should be filled with water on which it may spend its force. The tube should have a very slight contraction at the orifice, to give the foremost part of the fluid column a slight small excess of velocity; for otherwise the lowest part should have the most rapid motion. In the escape of gases through water the size of the bubbles depend on the force which urges them along, and, in the present case, their diameter must exceed that of the largest tube which

we may be tempted to use, so that the air or gas in escaping from its confinement should therefore project the water in one unbroken mass. From a cast iron tube 200 feet long, 20 inches in diameter, and 2 inches thick, a cylindrical column of water thirty feet long may be in this manner, launched into the air, with a velocity of over 700 feet a second, and, if not prevented by the air, it should reach an elevation of nearly 8,000 feet.

The resistance of the air to bodies moving with so great a velocity, would amount to more than half a ton to the square foot, but this resistance should cease, in a great measure, were the air to partake of their motion. The diminution of velocity which the ascending column of fluid water experiences from this cause, is almost exclusively confined to its vertex which imparts its motion to the air it encounters, but in doing so is itself driven into spray which separates from the common mass, instead of remaining to retard its velocity. While the resistance of the air, therefore, reduces the momentum of solid and fluid bodies, the former experience its effects by a loss of their velocity, the latter by a continual diminution of their mass; and the last remnant of a large column of water projected in a vertical direction should ascend to a much greater height than a solid with the same initial velocity. From the constant separation of spray a continuous column of moisture should extend to an elevation of many hundred yards above the surface of the Earth, forming an uninterrupted passage by which the electricity may desert the higher regions of the atmosphere, while a more extensive communication should be soon formed by the descent of rain if our aerial ocean contained moisture enough for the purpose. The effect of such a discharge, like the influence of a mountain, must extend to a distance of several leagues; and it would not be rash to expect that in this manner, the irregularities in the supplies of rain throughout the habitable globe, may be corrected with much less labor and expense than was bestowed on one of the artificial mountains of Egypt.

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### THE DEMOCRATIC REVIEW.

Under its present editorship, the Democratic Review, notwithstanding its zealous devotion to party politics, contains many rousing and progressive thoughts in reference to the diffusion of liberty and justice. The following extracts from the 9th number of 1852, are well worth quoting.

#### HUNGARY AND ITALY.

We allude to Hungary and Italy. What will the skeleton histories, which teach our children's children the rudiments of

that great record of human folly, crime, and virtue, have to say when condemning to the most meagre abridgment of facts and figures, the events of the time in which we live.

"Between 1848 and 1849, seven millions of disarmed Hungarians, who had magnanimously decided the political and civil equality of all races and all classes, were three times invaded, in eleven months, by the overwhelming armies of two Empires—once by 65,000 men against 2,500, once by 220,000 against 35,000, and lastly by 400,000 against 120,000. Betrayed by their own general, the traitor Gorgey, they were in this third invasion subdued, but only after they had made head against three rebellions, expelled the enemy in two of these invasions, and when in sixty pitched battles, a quarter of a million of men had perished in less than a year upon their soil."

Within regard to republican Italy, that "concentrated in Rome, under circumstances of the greatest discouragement, after Italian monarchy had been crushed in the field with 100,000 men, and when a victorious Austrian, a Neapolitan, a French, and a Spanish army, was arrayed against it, 14,000 republicans made head for two months against 26,000 Neapolitans, 30,000 Austrians, and 35,000 French, and defended the eternal city in the longest and most glorious siege it had sustained since its foundation."

These are plain facts there is no gain-saying, and which, however, we may gloss over or ignore them, will throw these events into relief in history's annals amongst its mightiest landmarks.

Yet there are men and writers amongst us in free America, whose sympathies are avowedly with the barbarian—who pertinaciously, in one case, depreciate these great achievements, and who, when the illustrious pilgrim was amongst us, but for whom this Titanic struggle never would have been, assailed him with falsehood, scurrility, and malice, like pigmies sticking pins into a new Prometheus. The popular instincts and the great heart of the people have vindicated Hungary and its leader, but Italy and its achievements remain comparatively a closed book for the million.

Italy rising from the sleep of ages at the call of a new and greater Rienzi, has performed deeds, and brought forth men worthy of the brightest times in her memorable annals; and yet on this side of the Atlantic, (in the only free and great republic,) that resurrection is ignored and the fame of her children yet only a vague notoriety.

#### FRENCH DEMOCRACY.

The greater superstition of the 19th century,—the monarchical form of government, has been finally expelled from the hearts of the same people, while the benighted English still madly cling to that species of sorcery and magic, by which the great bulk of mankind are trampled under foot, and thousands beggared, and tens of thousands starved to pamper the lust and pride of aris-



tocrats, and other enemies of the human race. Like the populations of Europe generally, in the South and centre of the continent, they trusted their liberties to the care of one man, who professed the utmost loyalty to them, and took his solemn oath that he would ever remain faithful to the people. France, like Germany and Italy, has been wholly betrayed; but who ever betrayed her and lived to boast of it, or left his descendants in possession of the broken trust? On the speedy downfall of the usurper and perjurer, Bonaparte, the least and last, all sensible men in and out of the British Islands expect that the self-liberated Frenchmen will forthwith attack the government of England, and set the people free to govern themselves, instead of longer submitting to the handful of men composing the oligarchy, of which the Queen is the puppet. A French invasion of London would not disturb any of the relations of life, and especially not the conditions of property; but it would place the reform of all existing abuses and oppressions in the unshackled hands of the people. What a glorious day would it be for mankind when the world is set free from pole to pole, by the overthrow of the head despot, which chains the seas as well as the land, and with hypocrisy about constitutions and mixed governments, deceives shallow leaders of public opinion, even in the United States. We are awaiting, from day to day, the movement of mighty France to break her bonds, and reverse the throne of England from off the necks of mankind. The garrison of Paris alone could make an English Revolution, as well as a French one, within the usual three days of grace.

#### ARISTOCRACY AND LABOR.

Why do Americans desire money? Because money represents, in a concentrated form, the ideal of the American. Splendor, refinement, hospitality, education. This is the dream of every American. It is for this, for himself or his children, that he thinks, and labors, and economizes. The rule is, that every American must earn his own fortune. The mistake is the desire to get rid of the rule, or to prevent the necessity occurring to one's children.

Why has the son not been taught the trade which enriched the father, or some other equally good, when it was known he was not suited to a profession, and would never attempt to succeed in it, even if that were his presumed destination? Because the father wished to give the son more refined associations! To look at the son, we may perhaps doubt the actual superiority of association, especially if we compare, in our recollection, the countenance of the intelligent, hard thinking father, with the bloated, or insipid, or haggard face of the son. And whatever may be said on the subject, if a man is a gentleman and a mechanic, he can be a mechanic and a gentleman. Or in whatever useful occupation he may choose to engage, he will still be

a gentleman. It rests with the wealthy and refined to give dignity to labor. They can do it, and if they do not, they are false to society, and to their own stability of position. We have in our mind's eye, gentlemen who are mechanics, and nobody doubts their gentility or position for a moment.

The old noblesse of Europe had this in misfortune, they never considered themselves humiliated by it. And in going to England, or coming to our country, they have always proudly taken hold of any occupation that would give them independent bread. Nor would they afterwards hesitate to refer to whatever business they engaged in.

If wealthy mechanics would show a just respect for handicraft themselves, and introduce a high toned independence on this subject into their own brave class, they would quench this morbid thirst for the approbation of this or that family whose chief aim it is to bury in oblivion the bare suspicion, that any of their blood ever kept a small grocery store, or sold goods on foot, or took measure of their customers to supply them with coats. Any trade can elevate itself in the estimation of the public if it will, but not by being ashamed of itself as a beginning. By banding together its members and making itself strong—by proclaiming with grateful pride its own handicraft not by humbly and meanly creeping away from it. Let them nobly make themselves superior. Let them dignify their character and manners by actual and real improvement, by positive accomplishments and the exercise of a healthy and independent judgment—not be the slaves of mere conventional despotism. The time will come when others will gladly seek their society.

#### POOR RELATIONS.

This subject brings us naturally to the contemplation of another subject closely allied to it, Poor Relations. It was the boast of a lady of high standing in New York, upon her brother's marrying *beneath* him, that it was the first "poor" person there had ever been in their family. May be so. It is not uncommon we believe in such cases, for all communication suddenly to cease. And, even, we have heard of systematic persecution following the unfortunate, or unwise, or, as we suppose it to be regarded by the offended parties, guilty act. On the other hand, we know families even in New York where the rich and powerful members do really countenance, everybody of "the blood." "It is us," say they, "our family—our name." Some like this generous pride. We have observed, too, that the families so sustaining their front before the world, have been of marked amiability and general respectability. You may say, "O, no wonder, then they were all so friendly." But we think the two things went together, the friendship and the respectability. By a little timely aid, perhaps only in the way of a strong recommendation, and that must be sustained, on proof of the recommended party.)

by the general impression abroad, that these related families are firmly allied with each other, the outer reputation of the family is maintained, and this tends greatly to the internal strength,—the consciousness that a failure of our hopes does not bring with it the frown of our nearest friends.

#### FAMILY DWELLINGS.

Probably no one fact gives rise to more immorality, meanness, unworthy contrivance, and serious discomfort, than this want of respectable dwelling places, at moderate prices. With us in the science of society, there is as a first principle this truth, that each separate family is a column in the national edifice, and that its unity and integrity is just as essential to the stability and soundness of the whole, as the mathematical proportion and aplomb of the columns of the Capitol at Washington.

Our proposition is for the erection of houses on the Edinburgh plan, the building to contain a dwelling house on every floor. A broad and strong base being obtained, upper stories could be multiplied with safety. By proper machinery, marketing, fuel, and all kinds of heavy articles could be at once lifted to the highest story. There could be, apart from this, a car or omnibus handsomely fitted up for the conveyance of passengers up and down. With such a conveyance well arranged, the upper stories would be far preferable, above the din and dust, and affording fine views of our beautiful bay. Many details will readily suggest themselves, or can be obtained by a little search and study. West of Broadway are multitudes of houses which could well afford to give way to such buildings. Contiguous owners would find it to their advantage to enter into partnership in the erection of these houses. The same principle could with great advantage be applied to buildings for the poor, as has already been ably advocated by our neighbor, the *Tribune*.

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#### MISCELLANEOUS NOTICES.

**DEMONSTRATION OF NEUROLOGY.**—In my course of lectures upon Neurology, now in progress in this city, I have made the members of the class conscious of the truth of the science, by their own experience. Requesting the entire class to co-operate with me, and place their hands upon each others heads, the greater number of those who engaged in the experiments, were capable of perceiving the influence, characteristic of each organ. This concurrent testimony of a large number of intelligent individuals in their natural state of mind, is far more appropriate as a demonstration of the functions of the brain, than a dramatic display of a single individual in the Mesmeric state—a process to which I never resort for the illustration of Neurology.

MR. VAUGHAN'S able essay upon the production of rain is highly interesting. According to the suggestions of the essay, the progressive clearing of forests in our country, will render us liable to still more disastrous floods on the Ohio, Mississippi, and other rivers, as well as to greater droughts in summer.

MRS. ELIZABETH OAKES SMITH, has been too much engaged at the East to pay the expected visit to Cincinnati the present season. Notwithstanding the coarse and malignant opposition of some of the newspapers, she has succeeded well before the public, and is entitled to great credit for her moral courage.

ANNALS OF SCIENCE.—A valuable periodical under this title has been established at Cleveland, Ohio, by Hamilton L. Smith. It is published in numbers of sixteen pages, twice a month, at \$1 per annum. A fuller notice has been excluded by want of space. It merits a liberal subscription.

ANDREW JACKSON DAVIS—The author of "Revelations," "Great Harmonia," &c., is at present in Cincinnati, and has given three public lectures to large audiences. Mr. Davis is an interesting specimen of humanity, but I have been unable to give much attention to him. His lectures are read from the manuscript in a quiet, calm, self-possessed manner. Mr. D., in speaking of the spiritual phenomena of the times, expresses the opinion that only about forty per cent. of them can be considered genuine spiritual operations, which are mixed up of course, with the mental influence and errors of the mediums; of the remainder about ten per cent. are impostures or delusions, and the remaining half are merely psychological phenomena of the parties themselves, unconnected with spiritual influence.

RELIGIOUS DISCUSSION.—Immense audiences have attended the discussion in this city, between Mr. Hassaurek, and the Rev. Mr. Nast, which has been conducted in German. The latter defends the truth of Christianity, which the former denies. The discussion being in the German language, our city papers, (English) have not told us anything of it.

KOSSUTH AND KINKLE.—Kossuth is living privately in England. He professes no disposition to make any farther speeches until he can make the Waterloo speech to his soldiers, "*up boys and at them.*" Oscar Reichenbach the treasurer of the German National Loan Fund, advocated by Prof. Kinkle, gives notice from London, that its proceeds have fallen short of eight thousand dollars, and it will be returned to the donors.

IRELAND is literally "*going to grass.*" The great landlords are turning out their tenants in order to lay the land down to grass, for flocks and herds. Sheep are more profitable than men—so the latter are turned out to die, while the former are turned in to grow fat.—*Exchange Paper.*

## THE NEW PHRENOLOGY.

In contrast to the old system of phrenology, the deficiencies of which are pointed out in this number, I present on the next page an engraved view of the new system.

For this system of cerebral science; the term PHRENOLOGY is not sufficient. PHRENOLOGY signifies the science of the mind, but a science which comprehends the physiological as well as the mental powers of the brain, is not merely a science of mind—it is in reality a SCIENCE OF THE BRAIN—a complete and not a partial system of cerebral science, and might be called justly a system of CEREBROLOGY or BRAIN SCIENCE.

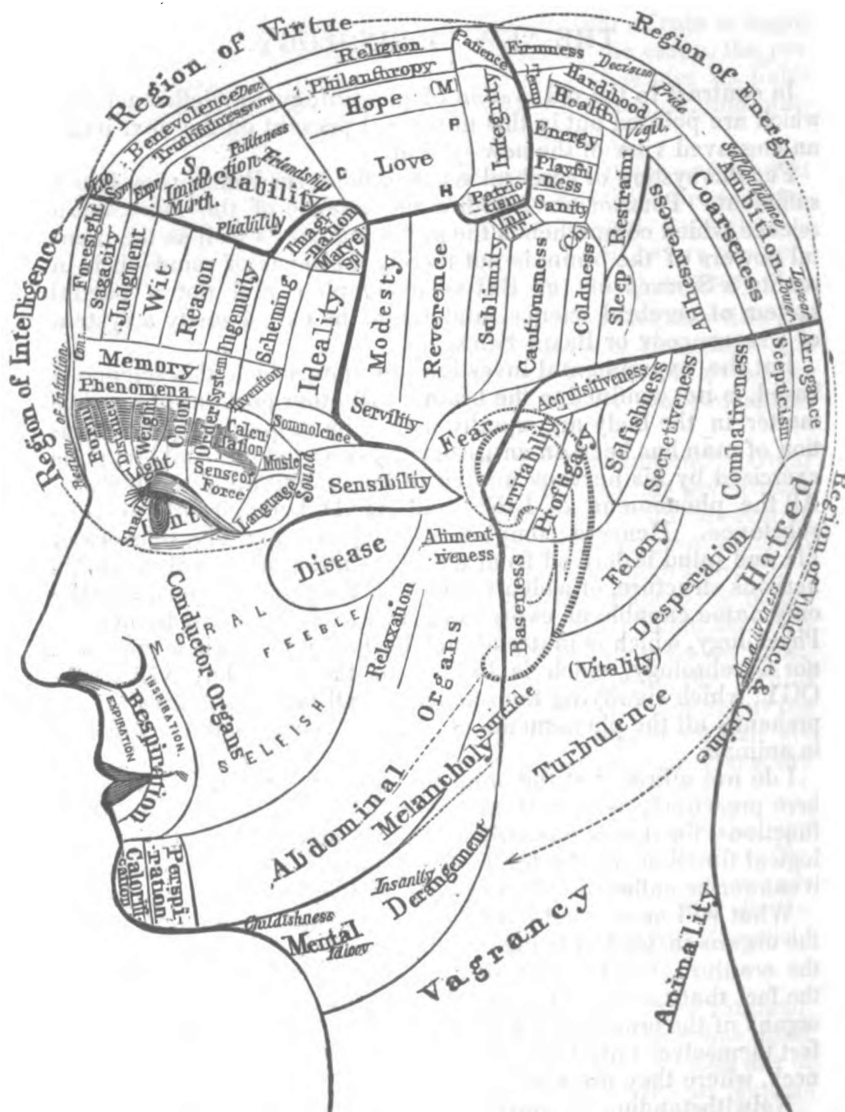
But the experimental investigation upon which this science is based, is not confined to the brain. All other portions of nervous matter in the body are equally within its scope. My investigation of man has been an entire developement of the vital functions exercised by his nervous matter, in the cranium and the body.—All the phenomena of LIFE and MIND, belong to the nervous substance. Hence a complete developement of the sciences of life and mind is derived from the exploration of man through his nervous structure, of which the brain is the principal part; and the only name capable of expressing such a science must be neither Physiology, which is material, nor Phrenology, which is spiritual, nor Cerebrology, which is limited to the brain, but NEUROLOGY, which signifying the science of all nervous matter—comprehends all the phenomena of life and mind, both in man and in animals.

I do not affirm that the map or chart of NEUROLOGY, which is here presented, is a full and complete sketch of the cerebral functions, for it contains only a limited statement of the physiological functions of the brain, but embracing as much as it does, it cannot be called merely a system of *Phrenology*.

What will most readily strike the observer as peculiar is that the organs instead of being confined to the palpable surface of the cranium, extend over the face and neck. This arises from the fact that the new system develops the functions of the basilar organs of the brain heretofore unknown, which organs can manifest themselves only through the adjacent portions of the face and neck, where they are marked on the map.

Notwithstanding the novel appearance of the chart, the student will find as he becomes familiar with the subject that the new organology does not contradict that of the Gallian system in many instances, although it makes many important additions.

Although the number of organs is much greater than the number recognized in the Gallian system, their location is governed by principles of so much simplicity, that the new organology is about as easily learned as the old system.



BUCHANAN'S SYSTEM OF NEUROLOGY.

(ABBREVIATIONS—*Int.*ellectual, *Cons.*cientiousness, *Lib.*erality, *Sym.*pathy, *Expr.*ession, *Mirth.*fulness, *Dev.*otedness, *Marvel.*ousness, *Spi.*rituality, *M.*ortality, *C.*onjugal, *P.*arental, *H.*umanity, *Inh.*abitiveness. *Tr.*anquillity, *Temp.*erance, *Ch.*astity, *Vigil.*ance.)